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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/563,353

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Masahide Matsuura

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EXAMINER

THOMPSON, CAMIE S

ART UNIT

PAPER NUMBER

1794

MAIL DATE

DELIVERY MODE

03/09/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/563,353	<b>Applicant(s)</b> MATSUURA ET AL.	
	<b>Examiner</b> Camie S. Thompson	<b>Art Unit</b> 1794	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on Amendment filed 11/26/08.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

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### **DETAILED ACTION**

1. Applicant's amendment and accompanying remarks filed November 26, 2008 are acknowledged.
2. Examiner acknowledges amended claims 1 and 8-9.
3. The rejection of claims 1-13 under 35 U.S.C. 112, first paragraph is overcome by applicant's amendment.
4. The rejection of claim 9 under 35 U.S.C. 112, second paragraph is overcome by applicant's amendment.
5. The rejection of claims 1-4 under 35 U.S.C. 102(e) as being anticipated by Hatwar et al., U.S. Patent Number 6,967,062 with evidence of inherency supplied by Lim et al., Journal of Organometallic Chemistry (vol. 691, pp 2701-2707 (2006)) is overcome by applicant's amendment.

### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

7. Claims 1-3, 6, 8-13 are rejected under 35 U.S.C. 102(e) as being anticipated by Arkane et al., U.S. Patent Number 2006/0257684.

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Arkane discloses an organic electroluminescent device comprising a pair of electrodes and at least one light emitting layer (which can include more than one layer) comprising a phosphorescent light emitting material and a host material disposed therebetween as per instant claim 3 (see abstract and paragraph 0014). The reference discloses an electron injecting and transporting layer adjacent to the light emitting layer. Paragraph 0014 also discloses that the energy gap of the electron transporting material in the electron injecting and transporting layer is smaller than that of the host material in the light emitting layer as required by the present claims as per instant claim 2. Arkane also discloses that the ionization potential of the host material is 5.9 eV or smaller. The examples disclose that the cathode comprises Al as per instant claim 6. It is disclosed in paragraph 0065 that the electron injecting and transporting layer comprises a nitrogen-containing heterocyclic derivative. It is disclosed in paragraph 0033 that the host material for the light emitting layer can be a carbazole derivative as per instant claim 1. Paragraph 0070 of the Arkane reference discloses the nitrogen-containing heterocyclic derivative as recited in present claims 8-13.

### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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9. Claims 4-5 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arkane et al., U.S. Pre Grant Publication 2006/0257684 in view of Sakai et al., U.S. Patent Number 6,224,966.

Arkane discloses an organic electroluminescent device comprising a pair of electrodes and at least one light emitting layer (which can include more than one layer) comprising a phosphorescent light emitting material and a host material disposed therebetween as per instant claim 3 (see abstract and paragraph 0014). The reference discloses an electron injecting and transporting layer adjacent to the light emitting layer. Paragraph 0014 also discloses that the energy gap of the electron transporting material in the electron injecting and transporting layer is smaller than that of the host material in the light emitting layer as required by the present claims as per instant claim 2. Arkane also discloses that the ionization potential of the host material is 5.9 eV or smaller. The examples disclose that the cathode comprises Al as per instant claim 6. It is disclosed in paragraph 0065 that the electron injecting and transporting layer comprises a nitrogen-containing heterocyclic derivative. It is disclosed in paragraph 0033 that the host material for the light emitting layer can be a carbazole derivative as per instant claim 1. Paragraph 0070 of the Arkane reference discloses the nitrogen-containing heterocyclic derivative. Arkane does not disclose the cathode as recited by present claim 7 or that the two light emitting layers have different peak wavelengths of light emission. Sakai discloses an organic EL device comprising at least two or more organic light-emitting layers sandwiched between a pair of electrodes wherein two or more of the organic light emitting layers are doped with a fluorescent substance. It is disclosed in column 2 of the Sakai reference that the host substance constituting each organic light emitting layer has an electron affinity of not smaller

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than 2.6 eV . The Sakai reference also discloses that the organic EL device comprises an electron transporting layer. It is disclosed in column 47, lines 18-25 of the Sakai reference that the cathode can be sodium as recited in present claim 7. Sodium has a small work function. Therefore, it would have been obvious to one of ordinary skill in the art to have the cathode of the Arkane reference be sodium in order to have a cathode that has a small work function in order to inject electrons into the device for emission through the electrode. It is disclosed in column 2, lines 33-68 that the ionization potential of the host substance constituting each organic light emitting layer satisfies the following requirement

$I_p(1) < I_p(2) < \dots I_p(n)$  which reads on present claims 4 and 5.

### ***Response to Arguments***

10. Applicant's arguments with respect to the present claims have been considered but are moot in view of the new ground(s) of rejection.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Camie S. Thompson whose telephone number is 571-272-1530. The examiner can normally be reached on Monday-Friday 8:00 am - 6:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on 571-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Camie S Thompson  
Examiner  
Art Unit 1794

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/Bruce H Hess/

Primary Examiner, Art Unit 1794